

REMARKS

In the Office Action, the Examiner indicated that claims 1 through 25 are pending in the application and the Examiner rejected all claims.

The Examiner is thanked for the telephone interview conducted on June 28, 2007; the present invention, cited art and outstanding rejections were discussed. Agreement was not reached.

The §101 Rejection

On page 2 of the Office Action, the Examiner has rejected claims 5, 8, 10, 12, 17 and 23 under 35 U.S.C. §101 as being directed to non-statutory subject matter. While applicant does not agree, Applicant presents herein amendments believed to overcome the rejections to further prosecution of the application. In particular, claim 5 has been amended to include a recitation similar to that of claim 7; claims 8, 10 and 12 depend from claim 5. Additionally, claim 17 has been amended to include a recitation similar to that of claim 19. The amended claims clearly result in a practical application producing a tangible result. The Examiner is respectfully requested to reconsider and withdraw the rejection of claims 5, 8, 10, 12 and 17 under 35 U.S.C. §101.

The Present Invention

The present invention provides, for use in a portable device, a resource management method, system, and product that insures that sufficient runtime resources are available for running a new application component. When an attempt is made to

store the new application component on the portable device (e.g., in non-volatile memory such as flash memory), the storage attempt is blocked unless sufficient runtime resources are available for use by that application component and for all of the application components already stored on the portable device to be run simultaneously.

Accordingly, in contrast to prior art systems in which a software application would be permitted to be stored on the device as long as there are sufficient system resources for storing the application (even if there would not be sufficient runtime resources to run the application at the same time other stored applications are running), the inventive technique prevents storage of such an application if there would not be sufficient resources to run the application at the same time other stored applications are running. This is accomplished as claimed.

When determining the amount of runtime resources available to be used by the to-be-stored application, the invention assumes that all existing programs already stored on the portable device are using the maximum amount of runtime resources that they need. By storing a new application component on the portable device only if sufficient runtime system resources will be available to run the application, even if all stored are run simultaneously, the present invention ensures that each stored application component will always have a sufficient amount of runtime resources to execute properly

U.S. Patent No. 6,402,028 to Graham

Graham discloses automated mass product of smart cards that include a memory that may be used to store and/or run software applications. Generally, Graham

discloses that applications may be loaded onto the smart card as long as there is sufficient available memory to store them on the smart card.

Claim Rejections, 35 U.S.C. §102

On page 3 of the Office Action, the Examiner rejected claims 1-9 and 14-25 under 35 U.S.C. §102(e) as being anticipated by U.S. Patent No. 6,402,028 to Graham. On page 7 of the Office Action, the Examiner rejected claims 5, 10 and 11 under 35 U.S.C. §102(e) as being anticipated by U.S. Patent No. 6,477,561 to Robsman.

Claim 1

Generally, the Examiner essentially asserts that since Graham's smartcard may use its RAM to run or store applications, and Graham stores an application only if there is sufficient RAM to do so, that Graham anticipates the claimed invention. Applicants disagree. The presently claimed invention is directed to provide an entirely different result than Graham as a result of its focus on runtime resources required to run an application. While Graham would permit storage of applications to the extent that there is insufficient remaining memory to run the stored applications, the claimed invention would not. The claimed invention would prevent storage of an application, even if adequate memory exists to store an application, and thus would leave that memory unused, if there would not also be sufficient runtime resources to run the application concurrently with the other applications already stored on the device. This is done through the use of RDLs and determination of CARSRMAX, as claimed.

Referring now to claim 1, claim 1 recites identifying one or more new application components scheduled to be loaded and stored on said portable device, each of said one or more new application components having a resource description list (RDL) associated therewith. As described in the application:

Each RDL 43 includes runtime resource requirements (e.g., RAM, thread, and socket requirements) of its associated application component 42. The runtime resource requirements in an RDL 43 of an associated application component 42 are an estimate of the maximum number of runtime system resources that the application component 42 will use when it is running. Page 10, lines 1-5. In emphasis of this feature, the claim has been amended to recite “said RDL identifying maximum required runtime resources that will be used when the respective application component is running.”

Graham has no disclosure whatsoever of an application having an associated RDL that describes the maximum number of runtime system resources that the application will use when it is running. Instead, Graham examines only the amount of memory required to store the application in the smartcard's RAM. That the RAM of Graham's smartcard may be used both to store and to run applications, as asserted by the Examiner in the telephone interview on June 28, 2007, is irrelevant.

By way of example, if the smartcard had 100MB of RAM, Graham would permit storage of an application that is 100MB in size on the smart card, without regard to the fact that the application might require an additional 20 MB of memory to run, and thus would not be capable of running on the 100MB smart card. In contrast, the claimed invention would not permit storage of such application.

Further, claim 1 recites “determining maximum required runtime resources for said one or more new application components from each said associated RDL.” Even if Graham’s smartcard has memory that may be used to run an application, Graham does not disclose determining the maximum amount of runtime resources that will be required to run the application, as claimed.

Further still, claim 1 recites “determining a CARSRMAX (Currently Available Runtime System Resources of the portable device assuming already loaded application components are using the MAXimum amount of runtime resources reserved for their use) of said portable device.” For clarity, claim 1 has been amended to expressly recite that the CARSRMAX assumes all of the already loaded application components are simultaneously using the respective maximum amounts of runtime resources reserved for their use. This is not disclosed in Graham; Graham discloses only storing or not storing an application on a smart card based on the amount of memory available on the smart card. There is no determination of how much memory or other runtime system resources would be available on the smart card if the already loaded applications were using the maximum amount of runtime resources that had been reserved for their use, as claimed.

Accordingly, since Graham does not disclose determining CARSRMAX, Graham does not disclose comparing maximum required runtime resources for an application components to CARSRMAX, as recited in the claim.

Finally, claim 1 recites “prohibiting . . . said . . . application components from being loaded and stored on said portable device if said CARSRMAX is less than said maximum required runtime resources.” To emphasize that CARSRMAX considers the

maximum runtime resources that they require to be run (and not stored), claim 1 has been amended to expressly recite that loading of a new application is prohibited “if said CARSRMAX is less than said maximum required runtime resources for running said one or more new application components.” This is not disclosed in Graham.

Graham does not disclose evaluation of the amount of runtime resources required to run an application as claimed.

For at least these reasons, Graham fails to disclose each and every element of the claim. Reconsideration and withdrawal of the rejection of claim 1 are requested respectfully.

Claims 2-4

Claims 2-4 depend from claim 1 and are patentable for at least the reasons set forth above for claim 1. Reconsideration and withdrawal of the rejections of claims 2-4 are requested respectfully.

Claims 5-9, 10, 11 and 14-25

Claims 5-9, 10, 11 and 14-25 include recitations similar to those of claim 1, and are believed patentable for reasons similar to those set forth above for claim 1. Neither Graham nor Robsman discloses each and every element discussed above with respect to claim 1. Reconsideration and withdrawal of the rejections of claims 5-9, 10, 11 and 14-25 are requested respectfully.

Claim Rejections, 35 U.S.C. §103

On page 9 of the Office Action, the Examiner rejected claims 5, 12 and 13 under 35 U.S.C. §103(a) as obvious in view of U.S. Patent No. 5,915,085 to Koved.

Claim 5 is amended herein; claims 12 and 13 depend from claim 5.

Reconsideration and withdrawal of the rejections of claims 5, 12 and 13 are requested respectfully.

CONCLUSION

In view of the foregoing amendments and remarks, Applicants believe claims 1-25 to be patentable and the application in condition for allowance, and request respectfully issuance of a Notice of Allowance. If any issues remain, the undersigned requests a telephone interview prior to the issuance of an action.

Respectfully submitted,

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/Gregory S. Bernabeo/
Gregory S. Bernabeo
Reg. No. 44,032

Synnestvedt & Lechner LLP
2600 Aramark Tower
1101 Market Street
Philadelphia, PA 19107
Telephone: (215) 923-4466
Facsimile: (215) 923-2189